# CONSTRUCTION PROJECTS START TO FINISH

From Plans to Patients

August 2024

# DISCLOSURES

- I am retiring at the end of the year!

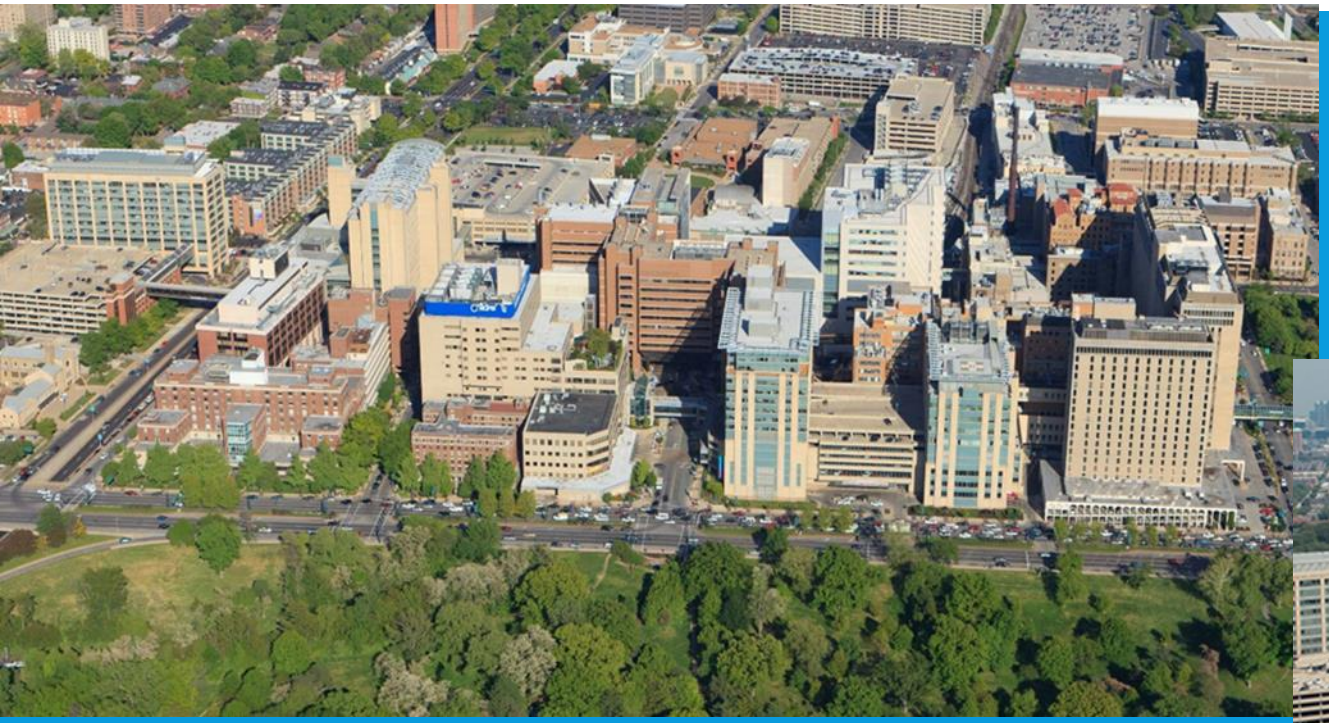
# LEARNING OUTCOMES

- Describe rationale for Infection Prevention involvement very early in the project
- Identify key markings on construction drawings
- Utilize patient safety and infection prevention knowledge to address unexpected incidents

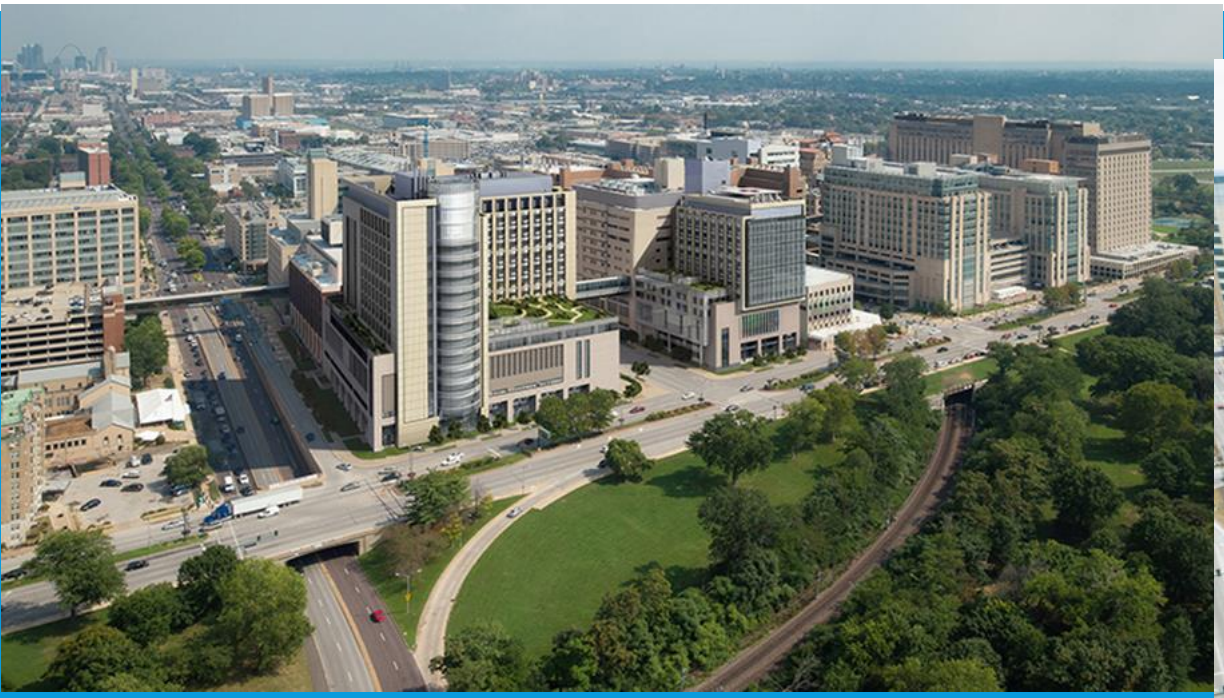
# WHO AM I?

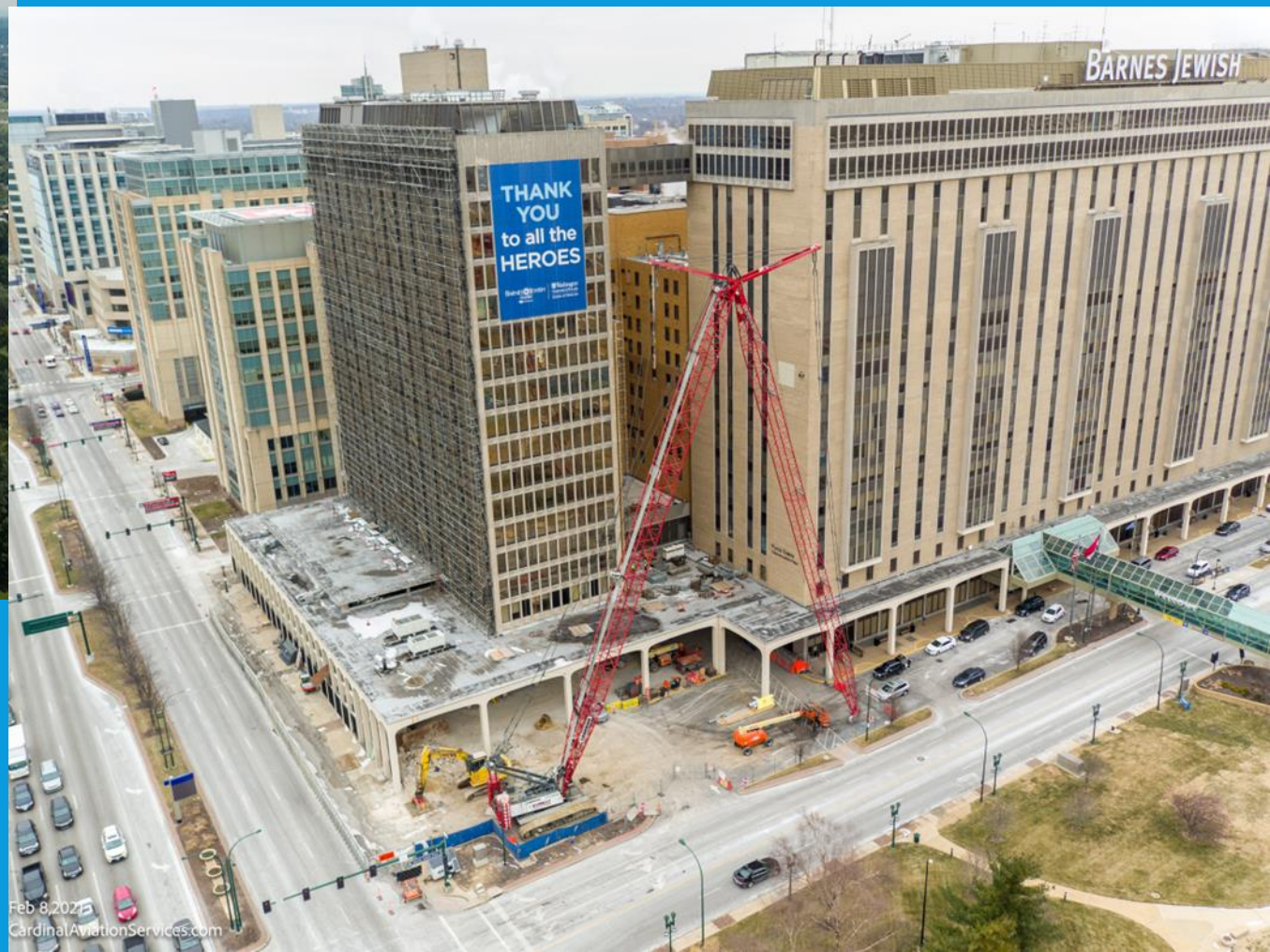
- RN – 1985
- BS Health Care Leadership – 1999
- Infection Prevention – 2003
- CIC certified 2005, 2010, 2015, 2020
- FAPIC - 2016
- President of local ASHE chapter 2020,2021, 2024
- Member of the FGI Guidelines 2026 revision team

# BARNES-JEWISH HOSPITAL – ST. LOUIS, MO

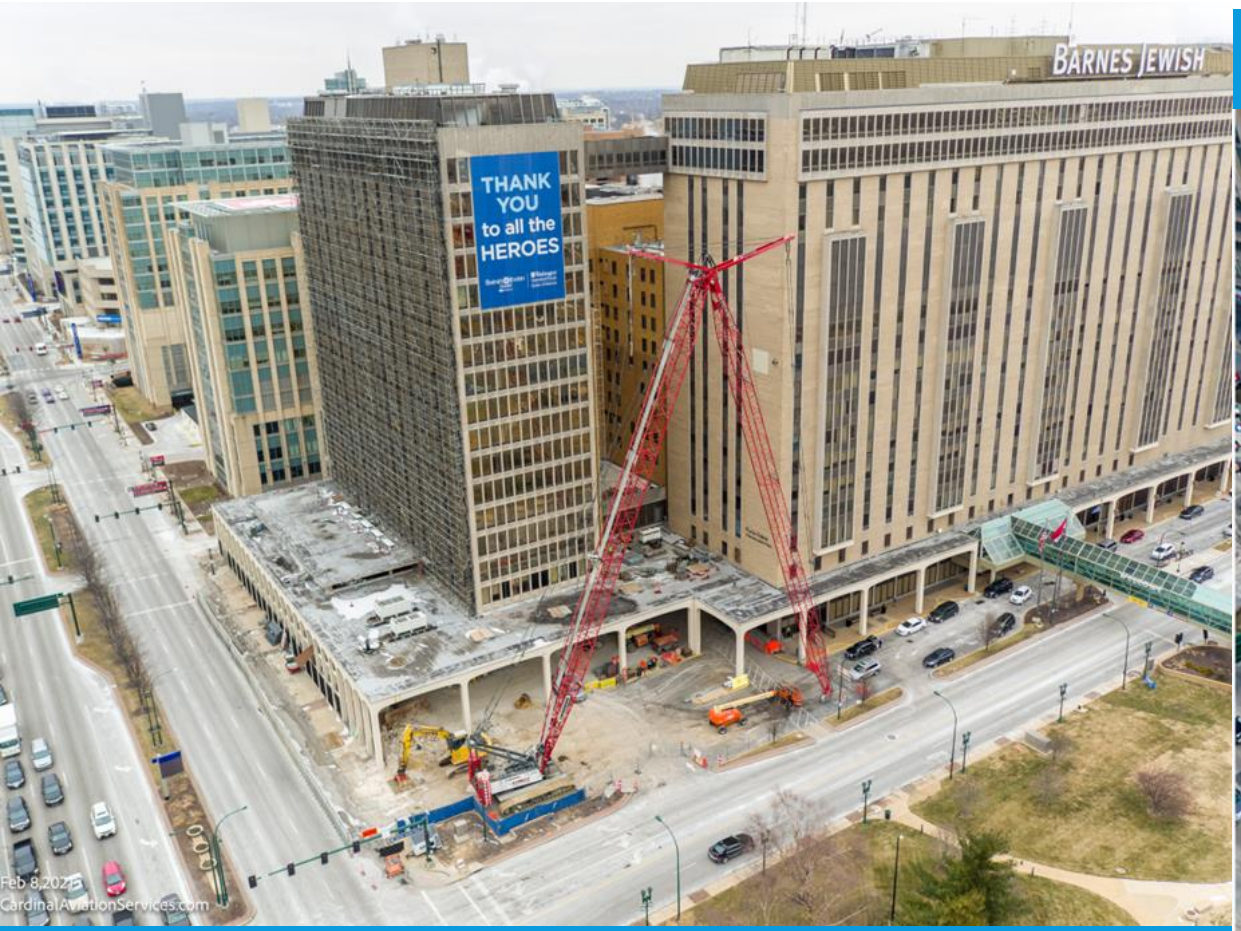


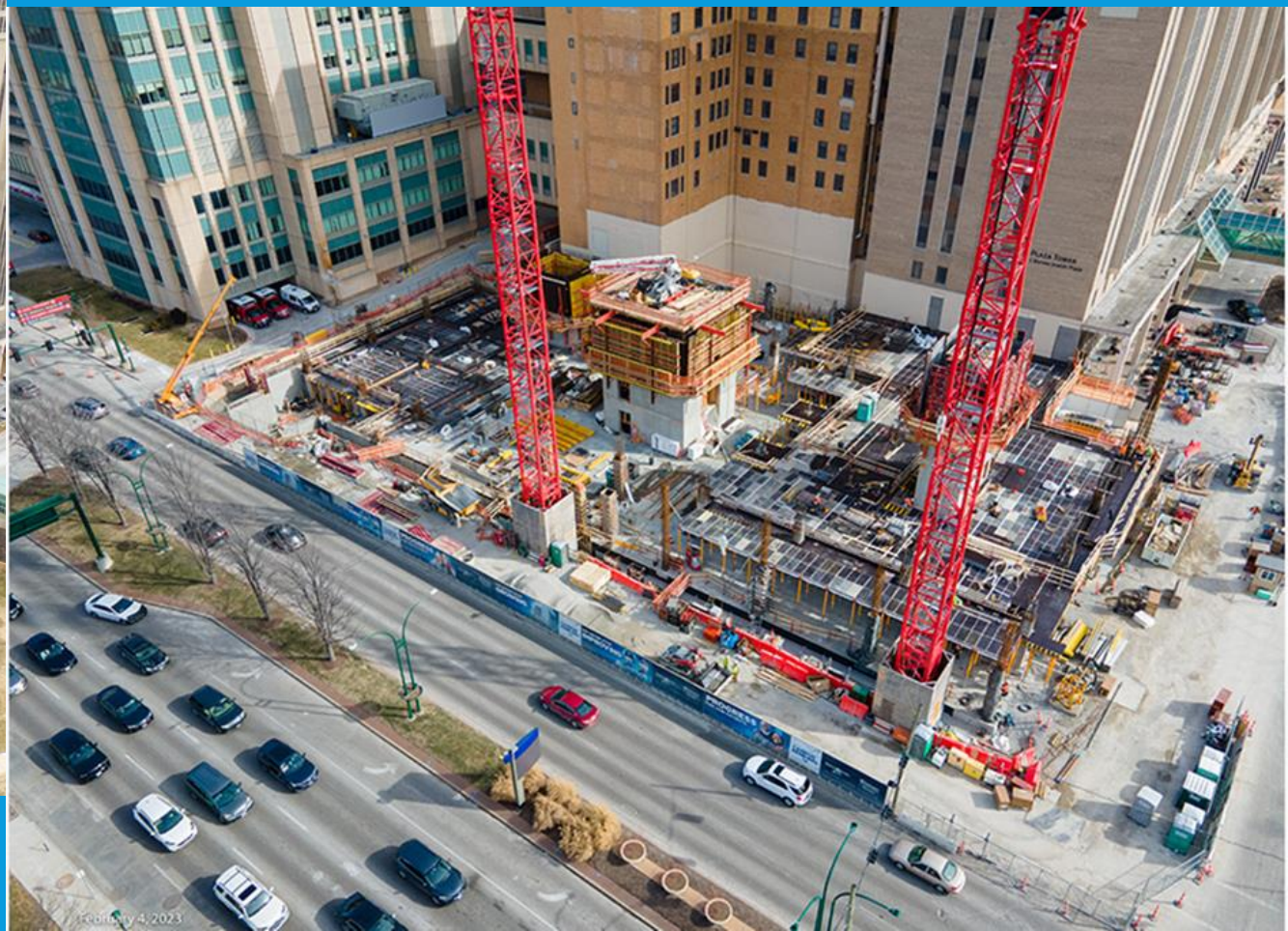
# AND SINCE THE LAST TIME WE SPOKE



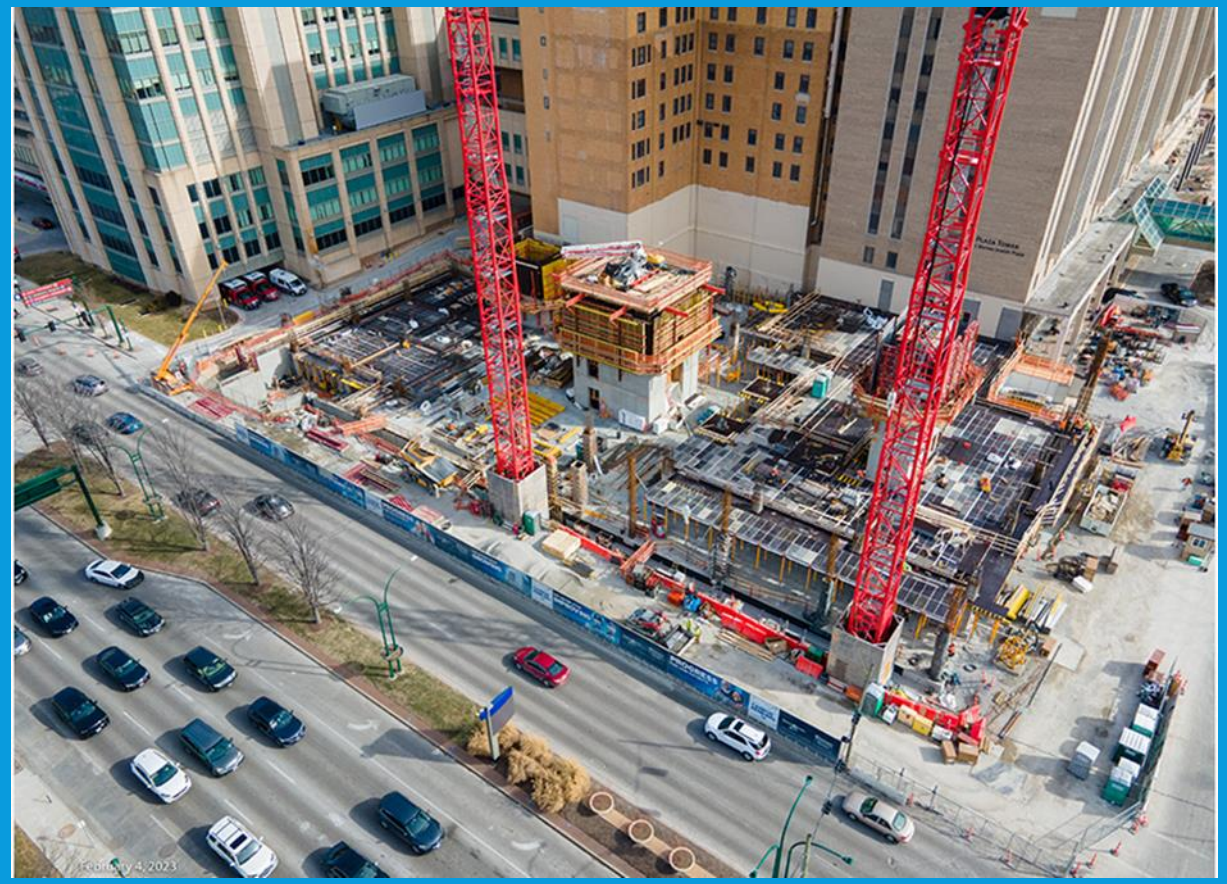


# QUEENY IS HERE – NOW IT'S GONE



# QUEENY IS GONE – NEW TOWER COMING BACK




BARNES JEWISH
BARNES JEWISH

# PROJECT ORGANIZATION AND STAGES

- Feasibility
- Schematic design (SD)
- Design development (DD)
- Construction documents (CD)
- Construction
- Commissioning

# FEASIBILITY

- Can this be done?
- Work-flow evaluation
- All rooms
- Ante rooms
- Clean to dirty flow
- Eliminate extra work
- Eliminate non-value-added items (not value engineering)
- Strengths and weaknesses
- Costs

# FEASIBILITY

- Does is meet codes and standards
  - AHJ
  - FGI
  - ASHRAE
  - ASHE
  - APIC

# FUNCTIONAL PROGRAM

- Owner advises architect of what desired outcome of project is
- Detailed list of interior and exterior spaces required for support of the project
  - Addresses human, technical and building resources necessary
- Architect then starts designing
  - Can all of it fit in the envelope

# FUNCTIONAL PROGRAM

BJC HealthCare

**BJC HealthCare – BJH** **TKH**

Barnes Jewish Hospital
Rand Johnson Decant
Hospitalists – Rand Johnson

Project No. 21120-04-00
BJC Project No. 21C707
September 21, 2021 Rev 3.14.2022

## Functional Program

**Description of Services/Model of Care:**
Hospitalists provide care to hospitalized patients at Barnes-Jewish Hospital on both the North and South Campus inpatient units, consult in the Emergency Room, and provide procedures in outpatient areas of the hospital. As part of this patient care, Hospitalists provide education to medical students, interns, and residents through bedside teaching and structured lectures.

**Existing and Proposed Location:**
Existing: ML Rand Johnson at 5,057 dgsf – relocation required
ML Barnes Administration at 455 dgsf – relocation required
ML Service Bldg. Suites at 2,003 dgsf – planned to remain
ML Peters Building at 652 dgsf – planned to remain
Proposed: TBD

**Patient Population:**
Local and regional acutely ill patients requiring hospitalization that are admitted through the emergency room to the various medicine designated patient care units/beds on both North and South campus, including Oncology and Bone Marrow Transplant beds on floors 8800 through 12800 in the Parkview Tower.

**Current Volumes vs. Projected Volumes (including assumptions):**
The Division of Hospital Medicine performs admission services, continuing care visits, discharges, consults, and procedures across the campus, totaling **~110,000 annual visits**. As we discuss further opportunities across the campus, we expect this could **increase year over year by ~5,000 visits**. On average, the service cares for >350 patients per day.

**Hours of Operation/Shifts/Visiting Hours:**

| | Mon. | Tues. | Wed. | Thurs. | Fri. | Sat. | Sun. |
|---|---|---|---|---|---|---|---|
| Clinical Ops | 24/7/365 | 24/7/365 | 24/7/365 | 24/7/365 | 24/7/365 | 24/7/365 | 24/7/365 |
| Admin Ops | 7a-6p | 7a-6p | 7a-6p | 7a-6p | 7a-6p | | |
| | | | | | | | |

**Number of Staff per Shift and Job Descriptions:**

| **Based on Busiest Shift: CURRENT** | | | |
|---|---|---|---|
| Name | Title | Computer Use - % of Shift | Dedicated or Touch-Down? |
| Departmental Staff | | | |
| Information has been omitted with this version of the Functional | | | |

BJC HealthCare

| | | | |
|---|---|---|---|
| Program – Not Applicable | | | |
| | | | |
| | | | |
| Ancillary Staff | | | |
| | | | |
| | | | |
| | | | |
| Busiest Shift | # of Dedicated stations needed | # of Touch-down stations needed | |
| Lightest Shift | # of Dedicated stations needed | # of Touch-down stations needed | |
| Designed to Typical Shift | # of Dedicated stations needed | # of Touch-down stations needed | |

**Circulation / Flow:**

Patient: N/A

Visitor: Educational, Research, and Professional collaborators/visitors will require daily access.

Nurse: N/A

Physician/Resident: Faculty of the division will require 24/7 access. Residents on service with faculty will also require daily access.

Ancillary Staff (i.e. Dietary, PT, RT, Lab, Pharmacy, Imaging, Etc.): N/A

Materials Management/House Keeping/Materials/Supplies/Soiled: Shred-It – once weekly to any separate area. Housekeeping – 2x per day Mon-Fri, 1x day on weekends.

**Key Adjacencies:**

Internal: Medicine Units and/or Emergency Department

External:

**Communication/Information Systems:**

Identify any of the following specialty equipment/software which will be required:
Vocera/Spectralink
Cisco wireless VOIP Phones: Yes
Cell Phone (business use): Yes. All faculty have corporate liable devices.
Video Conferencing: Yes. Division has Vaddio camera/speaker system.
Patient Touch Technology (PTT):
Applications (SIS, Metavision, Provation, Mosaiq, Cerner, Dictation, HCLL, etc.):
Require WUSM data lines.

**Education or Training Initiatives:**

- Simulation Training Room
- Project Rooms to facilitate small group meetings

BJC HealthCare

**Anticipated Changes/Trends:**

New Services or Expansion of Existing Services

- Anticipate that the clinical footprint of the division will continue to grow year over year. Planning and Identifying space to accommodate, at least, the next decade will be crucial to the space identification criteria.
- Medical Student and Resident Education space needed
- Development of quality improvement program with associated rooms

Changes in Healthcare Delivery or Technology

- Telemedicine
-

**Additional Design Criteria/Considerations:**

It is critical that the division's primary office suite follows an academic office setting with individual offices for senior faculty and pertinent leaders, as well as a welcoming, professional, and design-affected aesthetic. See: Oncology entry area in MCC. Suitable office space is to be furnished by the Hospital per the master hospitalist agreement. Windows preferred.

Protected Health Information, Human Resource, and Financial data all require secure discussion areas, and are best facilitated by the existence of private offices as several individuals hold different roles that impact these key areas.

| This document represents the agreement on the functional information provided by you: | |
|---|---|
| Sign: | Date: |
| Sign: | Date: |
| Administrator: | Date: |


Note: Code Review required.

Hospitalists Shared Floor Support:
- Cafe / Staff Break
- Conference Rooms
- Work Room

Hospitalists Program TBD:
- Toilet with shower
- Lockers
- Coat Closet

Legend
- Public Corridor
- Public Support
- Shared Support
- Hospitalists

# BJH Mid Campus

MCC - 7th Floor

Concept Test Fit Plan

# SCHEMATIC DESIGN (SD)

- Architect consults with owner to determine project goals and requirements
- Architectural program – defines the required functions of the project (functional program)
- Square footage type by usage is determined (offices, patient care, treatment areas etc.)
- Also research phase to make sure all jurisdictional requirements are addressed
- IP input at this phase can prevent design changes later

# DESIGN DEVELOPMENT (DD)

- Often specify types of materials used as well as window and door locations
- Things for IP to look for
  - Are fixtures and finishes acceptable
  - Hand washing sinks – number and location
  - ETOH hand rub placement
  - Clean to dirty flow
- Standards document goes with these drawings
- Specifications for everything – established by multi-disciplinary team
  - Beautiful flooring is useless if it can't be cleaned

# DESIGN DEVELOPMENT

- Project risk assessment is developed
- IP needs to review fixtures, finishes and materials
- DDs are then presented to owner for review and approval

# CONSTRUCTION DOCUMENTS (CD – BID DOCUMENTS)

- Once DDs are approved by all parties architect begins on CDs
- CDs have greater details that DDs
- Specifications are incorporated into the drawings
- Once complete, drawings are sent out for bid
- Design build is very common
  - General contractor is on board from start of DDs
  - General contractor sends out for bids from sub contractors
- IP precautions for dust control are included in these drawings
- Other special IP requirements are also included

# Bid Documents

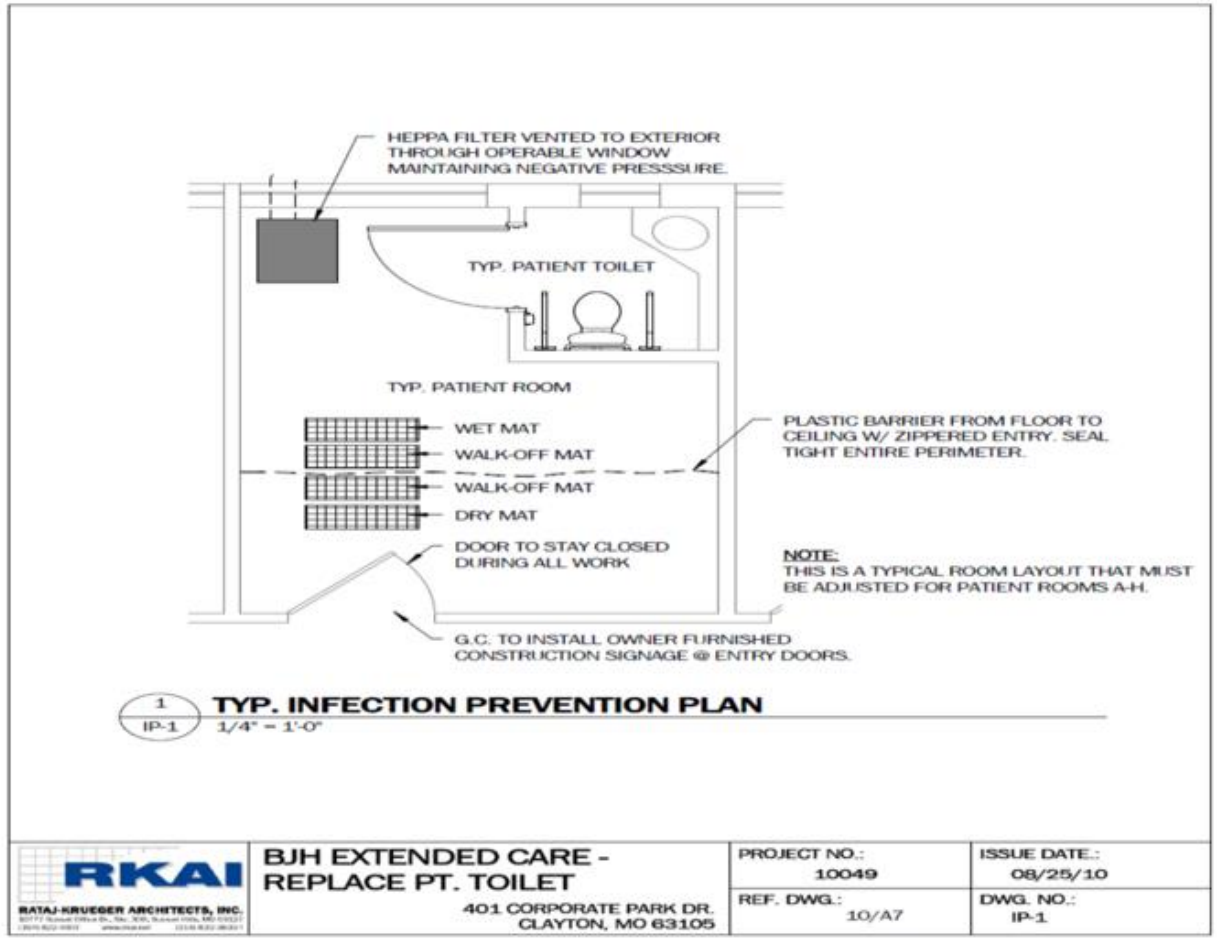
**RATAJ-KRUEGER ARCHITECTS, INC.**
10777 Sunset Office Dr., Ste. 300, Sunset Hills, MO 63127
(314) 822-4007 www.rkai.net (314) 822-3839 f

Donald J. Rataj NCARB, principal
Kurtis R. Krueger NCARB, principal
Geoffrey L. Crowley AIA, principal

## INFECTION PREVENTION NOTES

1. THIS PROJECT WILL REQUIRE G.C. TO FILL OUT DAILY (ILSM) INTERIM LIFE SAFETY MANAGEMENT SHEETS.
2. ALL WORK AREAS UNDER CONSTRUCTION MUST BE SEALED OFF FROM ADJACENT AREAS.
3. NEGATIVE PRESSURE MUST BE MAINTAINED AT ALL TIMES IN CONSTRUCTION AREAS.
4. ALL DEBRIS LEAVING CONSTRUCTION AREAS FOR DUMPSTER MUST BE COVERED W/ DAMP COVER & CART WIPED DOWN PRIOR TO LEAVING.
5. CONTRACTOR TO MAINTAIN WET MAT, WALK-OFF MAT, BARRIER, & DRY MAT AT ALL CONSTRUCTION ENTRANCES.
6. WALK-OFF MATS TO BE CHANGED HOURLY MIN. OR AS NEEDED.
7. REFER TO TYP. ROOM LAYOUT DETAIL 10/A7.
8. G.C. TO INSTALL OWNER FURNISHED CONSTRUCTION SIGNAGE @ PATIENT ROOM ENTRY DOORS.

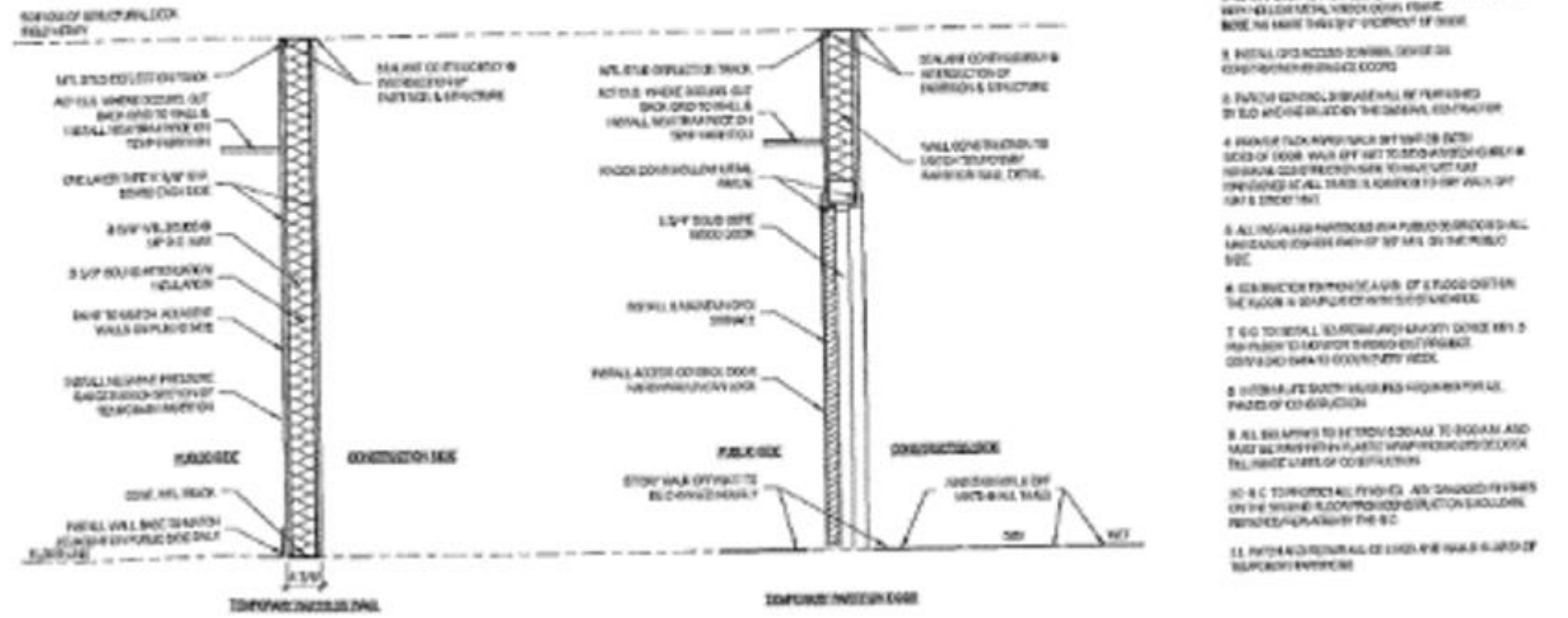
# A Good Idea




BARNES-JEWISH Hospital BJC HealthCare

BARNES-JEWISH HOSPITAL
Infection Prevention

# Bid Documents



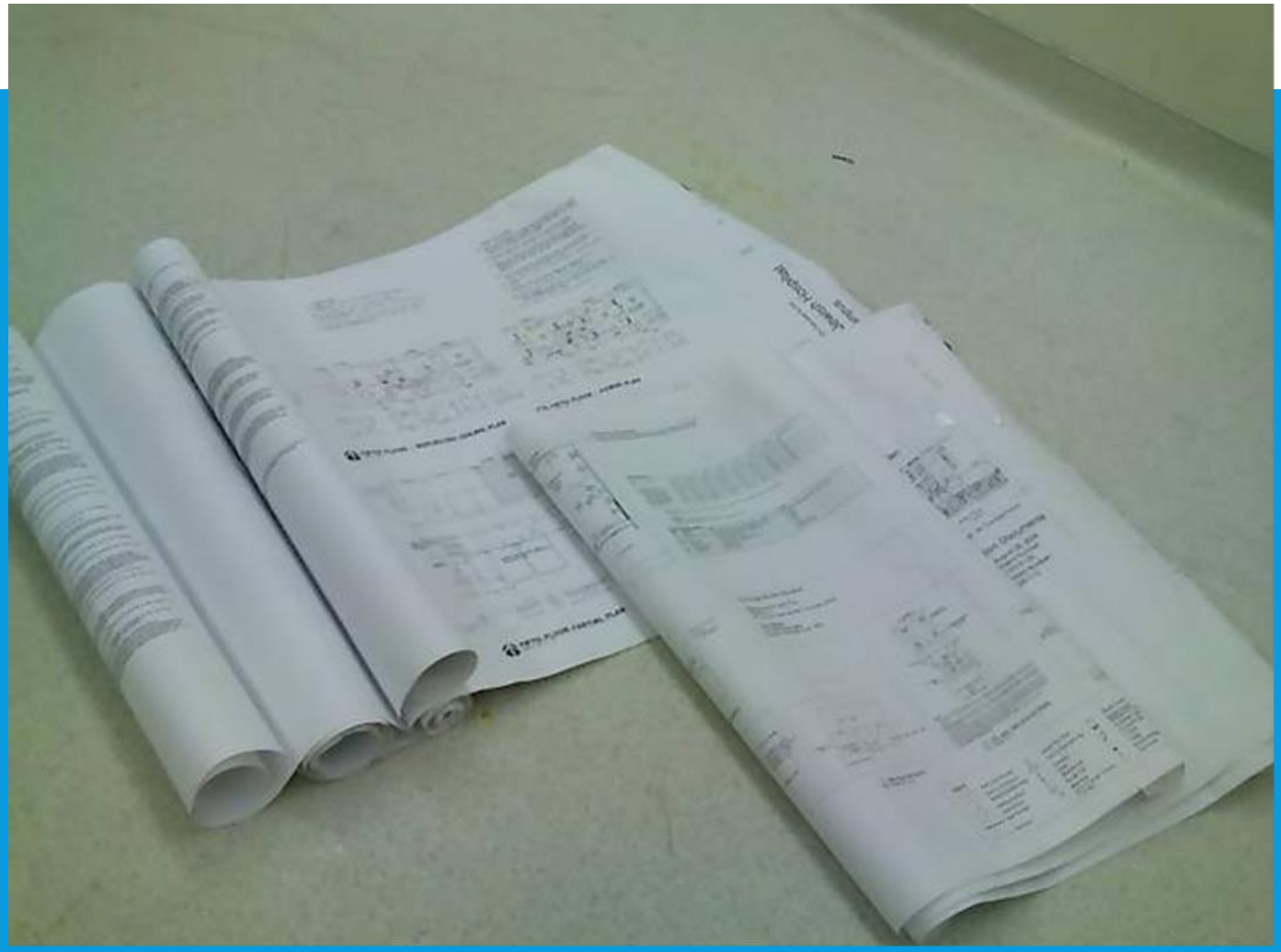
PARTITION TYPE - TEMP. MEDICAL

**GENERAL NOTES:**

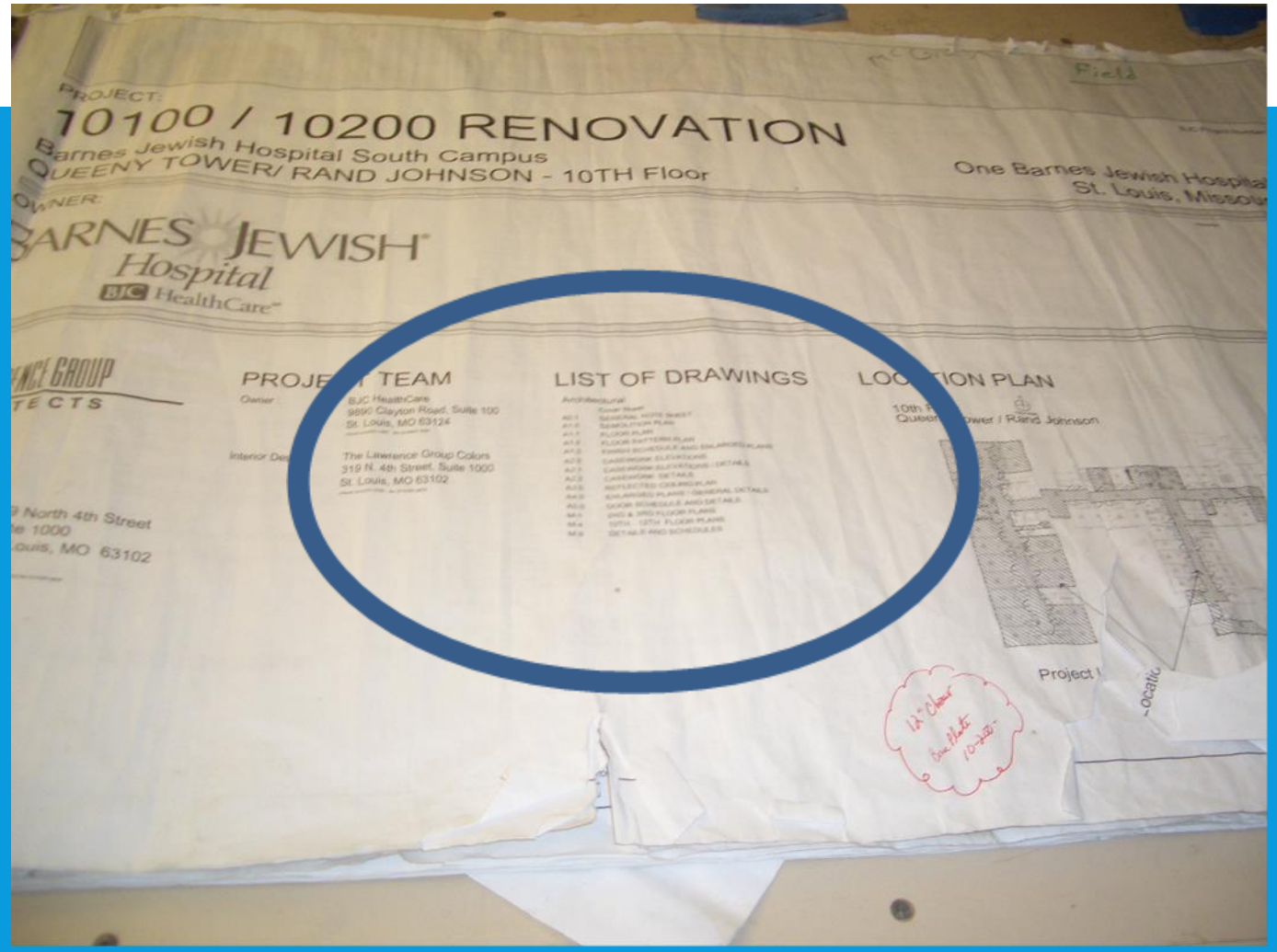
# CONSTRUCTION DOCUMENTS

- Don't be intimidated
- Learn the jargon
- You are not expected to be an expert
- ASK QUESTIONS

# CONSTRUCTION DOCUMENTS



# CONSTRUCTION DOCUMENTS




## Mechanical

| | |
|---|---|
| M-O | MECHANICAL NOTES AND SYMBOLS |
| M-1 | MECHANICAL SPECIFICATIONS |
| M-2 | MECHANICAL SYMBOLS AND ABBREVIATIONS |
| M-3 | MECHANICAL SYMBOLS AND ABBREVIATIONS |
| M-4 | MECHANICAL SCHEDULES AND DETAILS |

## Plumbing

| | |
|---|---|
| P-1 | PLUMBING SYMBOLS, SPECIFICATIONS, NOTES AND SCHEDULES |
| P-2 | PLUMBING 7TH & 8TH FLOOR DEMOLITION |
| P-3 | PLUMBING 7TH & 8TH FLOOR NEW WORK |

## FIRE PROTECTION

| | |
|---|---|
| FP-1 | FIRE PROTECTION SYMBOLS, SPECIFICATIONS NOTES AND SCHEDULES |
| FP-2 | FIRE PROTECTION DEMO AND NEW WORK |

## Electrical

| | |
|---|---|
| E-0 | ELECTRICAL SPECIFICATIONS AND SYMBOLS |
| E-1 | ELECTRICAL ONE-LINE DIAGRAMS |
| E-2 | ELECTRICAL DEMOLITION PLAN |
| E-3 | ELECTRICAL POWER PLAN NEW WORK |
| E-4 | ELECTRICAL LIGHTING PLAN NEW WORK |
| E-5 | ELECTRICAL PLAN - SYSTEMS |

# CONSTRUCTION PROCESS

- Now the fun begins
- IP needs to maintain high visibility
  - Minimally weekly rounds
- Barriers should be checked before project begins
- Demolition and drywall installation create the most dust
- What adjacent areas are impacted
- How much experience does this contractor have in hospitals
- How many phases is the project
- Good communication
- Weekly meeting attendance – ASK QUESTIONS

# PRE-CONSTRUCTION RISK ASSESSMENT

- Determines potential hazards prior to start of project
  - Air quality
  - Utilities impact
  - Emergency preparedness
  - Fire/life safety – ILSM
  - Noise and vibration
  - IP requirements
  - Contractor Education

# INTERIM LIFE SAFETY MEASURES

- Interim life safety measures (ILSM) were developed in response to an increase in fires in health care facilities due to high-risk construction activities
- ILSMs are put in place when construction activities impact the Life Safety Code (LSC)
- National Fire Protection Agency (NFPA) - ILSMs must be used when LSC impacted for >4 hours

| Section I - General Information | |
|---|---|
| Project Name: | |
| Project Number: | |
| Project Summary: | |
| Facility: | |
| Location Within Facility: | |
| Project Start Date: | |
| Estimated Project Duration: | |
| Estimated Completion Date: | |
| Number of Phases: | |
| ILSM Evaluation Date: | |
| BJC Project Manager: | |
| BJC Project Manager Phone: | |
| BJC Project Manager Signature: | |
| Contractor: | |
| Contractor Project Manager: | |
| Contractor Project Manager Phone: | |
| Contractor Project Manager Signature: | |
| Project Safety Manager: | |
| Project Safety Manager Phone: | |
| Project Safety Manager Signature: | |
| Facility EH&S Representative: | |
| Facility EH&S Representative Phone: | |
| Facility EH&S Representative Signature: | |
| Facilities Manager: | |
| Facilities Manager Phone: | |
| Facilities Manager Signature: | |
| Infection Prevention Representative: | Loie Couch |
| Infection Prevention Phone: | 314-368-2064 |
| Infection Prevention Signature: | |



Additional Signatures (may include: Department Manager, Project Superintendent, Subcontractors, Clinical Asset Management, IS, Security, Property Manager, etc.)

| Title | Name | Date |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Note: Your signature will reflect approval of entire risk assessment package.
If routed via email, routing slip is attached for verification of approval in place of actual signatures.

| | |
|---|---|
| Date: | |
| Project: | 0 |
| Project Start Date: | 1/0/1900 |
| Location(Facility): | 0 |
| BJC Project Manager | 0 |
| Contractor Project Manager: | 0 |

Instructions: For the designated BJC Project Manager (PM) to use as a tool to ensure that items are completed and/or exchanged as part of the risk assessment process.

| Y, N, | Item |
|---|---|
| | Completed a Pre-Construction/Maintenance Risk Assessment. |
| | Completed an ICRA. |
| | Completed an ILSM, or determined N/A. |
| | Completed a Construction and Demolition Environmental Checklist, or determined N/A. |
| | Exchanged information on the control of hazardous energy sources (lockout/tagout). |
| | Exchanged information on electrical safe work practices/Energized work documents. |
| | Hot work activities to be performed/Hot work permits discussed. |
| | Safety data sheets (availability location discussed). |
| | **Required** personal protective equipment on the job discussed/agreed. |
| | **Required** environmental-related permits obtained. |
| | **Required** Red tag permits discussed. |
| | Additional: |
| | Additional: |
| | Additional: |
| | Project Manager exchanged any required information and provided appropriate documents/forms as applicable, on behalf of BJC and the specific facility. |
| | Contractors received copies of the relevant core and site-specific policies and procedures. |
| | Contractor and BJC site safety contact and emergency information exchanged. |
| | Contractors agree to send copies of site safety walkthroughs to BJC Risk Management and the facility safety representatives upon request. |



| Completed by: | | | |
|---|---|---|---|

| Type of Event | Code Name/Plain | Explanation of Code/Example |
|---|---|---|
| Fire | Code Red or Dr. Red | Include Location of fire. |
| Armed Violent Intruder | Code Silver | Include location of affected area<br>NOTE: Plain language can be used for this event as well. If using plain language provide direction as |
| Bomb Threat | No Code or Broad Notification | Notification should be done to a smaller group and no code or overhead notification made. It is not typical to evacuate during a bomb threat. |
| Evacuation | Evacuation and Location | Evacuation – unit 9300 |
| Hazardous Material | Hazardous Material Spill and | Hazardous Material Spill – room 2N80 |
| Mass Casualty Event | Mass Casualty – Internal | Used for any patient surge due to internal emergency |
| | Mass Casualty – External | Used for any patient surge due to external emergency |
| | Mass Casualty – Decon | Used for any patient surge requiring chemical |
| | Mass Casualty – Radiation | Used for any patient surge involving radiation |
| Patient Abduction | Code Pink | Used for any pediatric patient but includes age of child and gender (i.e. Code Pink, 3 Male would be used for a three year old male) include location. |
| Security Code | Code White | Used to identify a potential aggressive situation or request for a response from a trained security team.<br>NOTE: Plain language may be used for this event as well (see below) |
| Security Emergency | Security to (identify location) | Used for security emergency |
| Severe Weather | Activate Severe Weather Plan | |

## PRE-CONSTRUCTION/WORK RISK ASSESSMENT SUMMARY

| | | | |
|---|---|---|---|
| **Classification:** | X Construction | Renovation | Demolition | Maintenance |
| **Project Name:** | 14300 Schukar Patient Division Finishes | **Facility:** | BJH |
| **Project Number:** | 23I4001000 | **Location:** | West Pavilion |
| **Evaluation Date:** | 1/8/2024 | **Start Date:** | 2/6/2024 |
| **BJC Project Manager** | Frank Diebold | **Contractor:** | BJH Facilities Construction |
| **Project Summary** | 14300 Patient Unit Refresh-Finishes | | |
| **Describe the activities and tasks involved in the project.** | | | |

| Category | Potential Hazards/Mitigation Strategies (Examples listed below) | Project Specific Mitigation Strategies (If items do not apply, mark N/A in box) |
|---|---|---|
| Air Quality/Ventilation | Dust, fumes, mists, vapors, mold, product/task issues, location of makeup air, # of air changes, filter testing /maintenance. Assess need for monitoring. | Air/Dust controlled - hard partitions HEPA |
| Blood borne Pathogens | Sharps containers, red bags. | N/A |
| Barrier Management | Fire wall penetrations and holes (May require ILSM and/or permit). | To Facilities standards and inspection.ILSM and Permits to be posted |
| Emergency Preparedness | Codes, contact lists, action plans identified/discussed. | Provided/ to be posted. Organizational correspondence distributed detailing project. |
| Fire/Life Safety/ILSM | Hot-work, sprinkler/fire alarm shut-off (Red-tag permit), egress, signage. | All work coordinated with Building Maintenance staff. |
| General Safety and Construction Safety hazards | PPE, fall protection (4' Rule), caught between, struck-by, ladder safety, within approach boundary of electrical equipment, etc. | PPE -safety glasses -safety toe boots. Ladder safety. |
| Infection Prevention | Insert Risk Category and specific mitigation strategies per ICRA, attach barrier drawing. | ICRA Completed and posted. "Red" project. Patients are relocated to 5200 and 8900 during project. |
| Hazardous Materials | Items from Environmental Concerns Checklist, cleaners, medical gases, oxygen, radiation, natural gas. Provide SDS for hazardous chemicals used. | All materials are -no VOC |
| Mobile Equipment and Vehicle Operation | Emissions tier 3/4, assess need for spotters, flaggers, inspections, etc. | N/A |
| Noise/Vibration | Power equipment, demolition, noise & vibration, assess need to monitor and plan to mitigate as required. | Some noise, Staff to be notified as work progresses. |
| Utilities and Control of Energy Sources | Electrical access hazards, building impact, stored energy, lockout/tag out. | Any access to electric devices to be coordinated with Facilities. |
| Special Hazards | MRI/Cryogen Safety, MRI quenching, chemical/biological/ radiological hoods/areas, radar scanner for embedded items | N/A |
| Security | Access control, panic alarms, badges | Subs badged, access controlled |
| Other | Contractor COVID Plan | 1. Facemask properly donned when within Medical Center,<br>2. Social Distancing as often as possible >6',<br>3. Frequent hand washing,<br>4. Daily COVID-19 assessment check at entry portal before work start,<br>5. Daily assessment sticker placed on badge, readily visible. |

**Instructions:** Check categories for potential hazards and evaluate risks. Appropriate permits, procedures and forms will need to be implemented as part of the actions taken.

November 2018

| | | | |
|---|---|---|---|
| **Project Number:** | 0 | **Location:** | 0 |
| **Evaluation Date:** | 1/0/1900 | **Start Date:** | 1/0/1900 |
| **BJC Project Manager** | 0 | **Contractor:** | 0 |
| **Project Summary** | 0 | | |
| **Describe the activities and tasks involved in the project.** | | | |

| Category | Potential Hazards/Mitigation Strategies (Examples listed below) | Project Specific Mitigation Strategies (If items do not apply, mark N/A in box) |
|---|---|---|
| Air Quality/Ventilation | Dust, fumes, mists, vapors, mold, product/task issues, location of makeup air, # of air changes, filter testing /maintenance. Assess need for monitoring. | |
| Bloodborne Pathogens | Sharps containers, red bags. | |
| Barrier Management | Fire wall penetrations and holes (May require ILSM and/or permit). | |
| Emergency Preparedness | Codes, contact lists, action plans identified/discussed. | |
| Fire/Life Safety/ILSM | Hot-work, sprinkler/fire alarm shut-off (Red-tag permit), egress, signage. | |
| General Safety and Construction Safety hazards | PPE, fall protection (4' Rule), caught between, struck-by, ladder safety, within approach boundary of electrical equipment, etc. | |
| Infection Prevention | Insert Risk Category and specific mitigation strategies per ICRA, attach barrier drawing. | |
| Hazardous Materials | Items from Environmental Concerns Checklist, cleaners, medical gases, oxygen, radiation, natural gas. Provide SDS for hazardous chemicals used. | |
| Mobile Equipment and Vehicle Operation | Emissions tier 3/4, assess need for spotters, flaggers, inspections, etc. | |
| Noise/Vibration | Power equipment, demolition, noise & vibration, assess need to monitor and plan to mitigate as requried. | |
| Utilities and Control of Energy Sources | Electrical access hazards, building impact, stored energy, lockout/tagout. | |
| Special Hazards | MRI/Cryogen Safety, MRI quenching, chemical/biological/ radiological hoods/areas, radar scanner for embedded items | |
| Security | Access control, panic alarms, badges | |
| Other | | |

**Instructions:** Check categories for potential hazards and evaluate risks. Appropriate permits, procedures and forms will need to be implemented as part of the actions taken.

# Infection Control Risk Assessment (ICRA)

☑ Not Required for Project

| | | | |
|---|---|---|---|
| **Name of Project:** | **WUSM Ambulatory Cancer** | **Project #:** | **10104638** |
| **Location of Construction:** | **Through lobbies & pedestrian** | **Project Start Date:** | **1/29/2024** |
| **Phasing?:** | Yes ☐ No ☑ **How Many?:** | **Completion Date / Project End** | **1/29/2024** **2/9/2024** |
| **Patient Relocation?:** | Yes ☐ No ☑ | **Contractor:** | **Clayco Construction** |
| **Relocation area:** | | **IP Representative:** | **Lois Couch** |
| **Facility EH&S Representative:** | **Emma Hunkr** | **Facility Representative:** | **Shelly Brady** |

## CONSTRUCTION ACTIVITY TYPES: Mark "X" in box next to type

| | | |
|---|---|---|
| ☐ | **Work Type A** | ***Inspection and non-invasive activities, involving no dust, including but is not limited to:*** |
| | | · Painting (but not sanding) |
| | | · Electrical trim work, , and activities which do not generate dust or require cutting of walls or access to ceiling other than for visual inspection |
| ☑ | **Work Type B** | ***Small-scale, short duration activities which create minimal dust, including but not limited to:*** |
| | | · Minor plumbing |
| | | · Removal of ceiling tiles for visual inspection |
| | | · Installation of telephone and computer cabling using existing "J" hooks or wire trays |
| | | · Removal of < or = to 5 floor tiles or carpet squares |
| | | · Access to chase spaces |
| | | · Cutting a small area of a wall where dust migration can be controlled such as within a closed chase space or use of a hepa vac while cutting |
| ☐ | **Work Type C** | ***Typically large-scale, longer duration activity (e.g.> one work shift) that generates a moderate to high level of dust, requires demolition or removal of any fixed building components or assemblies, including but not limited to:*** |
| | | · Sanding walls |
| | | · Removal > 5 floor tiles or carpet squares or removal of core work |
| | | · Any work above ceilings including J Hook or wire tray installation |
| | | · Major cabling activities |
| | | · Major demolition |
| | | · Wall covering or cove base removal |
| | | · New construction |

## INFECTION CONTROL RISK GROUPS:

**Mark "X" in box next to location. Using the following table, identify the patient risk group that will be affected. Consider impact on areas immediately above, below and or adjacent to the area where the active work is being performed.**

| **Patient/Location Group 1-** | | | | **Patient/Location Group 2-** | | | |
|---|---|---|---|---|---|---|---|
| ☐ | Outpatient clinics, excluding cancer clinics, transplant clinics and chemo infusion centers | ☐ | All inpatient areas EXCEPT adult & pediatric oncology, and bone marrow transplant | ☐ | Interventional Radiology/Pain Management Procedural Areas (Invasive Procedures) | ☐ | All laboratory areas |
| | | | | | | ☐ | Special Care Nurseries (level 2 or >) |
| ☐ | Endoscopy suites | ☐ | Emergency Department | ☐ | Transplant units, including Bone Marrow Transplant Unit | ☐ | Dialysis Units |
| ☐ | Nuclear Medicine | ☐ | Labor and Delivery | ☐ | Central Sterile Processing | ☐ | Inpatient Oncology areas |
| ☐ | Cardiology | ☐ | Well baby nurseries | ☐ | Operating Room (including C-section rooms) | ☐ | Pharmacy, main and all satellites |
| ☐ | Pulmonary function lab | ☐ | Pediatrics | ☐ | Cancer clinics, including chemo centers, transplant clinic | ☐ | Cardiac Cath Lab/Hybrid Ors |
| ☐ | Echocardiography | ☐ | Pre and post op areas | ☐ | Radiation oncology/Gamma knife/ Linear accelerator/Proton | ☐ | Laundry/Linen Room |
| ☐ | Radiology/MRI, CT, PET/US | ☐ | Pain Management Clinic | ☐ | Intensive Care Units | ☐ | Outdoor work: <75 feet from an air intake |
| ☐ | Respiratory Therapy | ☐ | Therapy Services | | | | |
| ☐ | Wound center | ☐ | Ultrasound | | | | |
| ☐ | Admitting | ☐ | Main lobby areas and/or common hallways | | | | |
| ☐ | Offices (e.g. no patients present) | ☐ | Medical Office Building/Doctors' offices | | | | |
| ☐ | EVS | ☐ | Chapel | | | | |
| ☐ | Outdoor work: >75 feet from air | ☐ | Kitchen, cafeteria | | | | |

## Construction Activity

| Risk Level | Type A low dust | Type B minimal dust | Type C moderate / major dust |
|---|---|---|---|
| Green - | ☐ GREEN | ☐ YELLOW | ☐ RED |
| Yellow - or green for risk | ☐ GREEN | ☐ RED | ☐ RED |

| Job Class | | | DURING Construction Project | |
|---|---|---|---|---|
| GREEN | Check if applicable | N/A | Intervention: | Additional Notes |
| No dust, minimal | X | | Close doors to patient rooms or offices over work | |
| | X | | Doors closed to supply areas or ensure clean supplies lightly; store supplies away from where work is performed | |
| | X | | Linen carts covered or moved away from where work is performed | |
| | | | Cover office furniture, computers and equipment with plastic; protect personal belongings as appropriate | |
| | | X | Additional requirements not already documented: | |

| YELLOW (in addition to green above) | Check if applicable | N/A | Intervention: | Additional Notes |
|---|---|---|---|---|
| Limited or uncontrolled | X | | Infection Prevention Specialist consulted at least 5 business days (72 hrs) prior to start of project. | |
| | | X | Post signage at beginning of project if project is for > 24 hours; Responsible person: _____ | |
| | | X | Project supervisor/dust or HSO specific Facilities worker to check in with department manager or designee (e.g. charge nurse) at the beginning of each shift: _____ Charge nurse _____ Department / Office manager _____ Other (specify) | |
| | | X | Use methods to minimize migration of dust, other contaminants and or accumulation of water, such as working within a cube, misting of ceiling surface with water (with or without bleach), appropriate plastic barrier, use of hepa vac while cutting, etc. | |
| | | X | Mist carpet tiles before removal | |
| | X | | No patients present in active work area | |
| | X | | Materials being brought to project site should be covered/wrapped | |
| | X | | Debris removed in covered containers | |
| | X | | Designate an elevator or route for debris removal when necessary | |
| | | X | Open pneumatics must be covered if unoccupied (e.g. plastic, dry wall, etc) | |
| | X | | Access panels without barriers must be closed if unoccupied | |
| | X | | Ceiling tiles replaced ASAP and must be closed if unoccupied | |
| | | X | Walk off sticky mats | |
| | X | | Clean work site at end of workday. | |
| | X | | HEPA machine in area as air scrubber. Designate location of machine: _____ | any work done during the day will be dusty/HEPA filters. At night it will be in public areas when calling for the cleaners |
| | | X | Additional requirements not already documented: | |

| Intervention: | Check if applicable | N/A | Additional Notes |
|---|---|---|---|
| Patients to wear masks when entering or leaving HSD. Notification responsibility person: _____IP _____Other (Specify) | | | |
| Barriers constructed and inspected by IP prior to beginning work | | | |
| Barrier type: ____Air tight wall (plastic) wall (acceptable if work lasts 72-96 hrs or less per discretion of IP/Safety); ____ Airtight hard wall partition (floor to desk); _____Airtight hard wall partition (floor to ceiling) with wall (plastic) wall (ceiling to desk) | | | |
| Ceiling plastic curtain required | | | |
| Barrier seams taped | | | |
| Maintain negative air flow within construction site (Note: may turn off air supply if necessary to achieve negative pressure) | | | |
| Check pre filters on fans or units used to maintain negative airflow (commonly HEPA) at least daily or more frequently if major demolition | | | |
| Use visual monitor/aide for negative air pressure. | | | |
| Construction to document at least daily that negative pressure is being maintained. | | | |
| Return air vents blanked or sealed before beginning work if applicable. | | | |
| Monitor and change return and filters as needed and documented. | | | |
| Workers to remove dust from clothing prior to entering any hospital areas; e.g. sticky mats, vacuum clothing, apply clean clothing or remove coveralls and shoe coverings | | | |
| When going thru sensitive areas, protective attire (PA) must be worn in anteroom and work area. PA must be removed before entering the work area because it will be used again to exit | | | |
| Keep work area clean e.g. wet mop or HEPA vac frequently_____X per day to decrease risk of tracking dust through clean areas | | | |
| Wet mat (may consider 10% bleach solution); If using bath sticky mats and wet mats, order should be wet mat, dry mat, sticky mat) | | | |
| Create an isolation room (ORs, trauma/BMT units, large areas where negative pressure difficult to achieve, etc) | | | |
| Mist outdoor construction site frequently and as needed to prevent dust accumulation | | | |
| Wet mat removal | | | |
| Assess location of air intakes for outdoor projects and/or projects where work is being done < 25 ft from intakes- additional or higher filtration may be required to avoid entry of contamination (e.g. dust and debris) of air intakes | | | |
| Partner with EHS to determine if air sampling (e.g. particle counts) is required during the project. | | | |
| Additional requirements not already documented: | | | |

# ICRA

- Completed for each project
- May need one for each phase
  - Patient proximity and intensity of work determines precautions
- Reviewed with contractors and project manager
- Barriers should be evaluated prior to work beginning and throughout the project

# ICRA

- Type of Barriers
- Project entrance and exit
- Path for debris hauling and equipment hauling
- Elevator use
  - Limited hours of use
- Placement of sticky mats
- Hours of work
- Contact information if work needs to be stopped

# ICRA

- Weekly walkthrough with super
- Head laborer
- Different trades on site
- Familiarity with contractors

# OTHER CONSTRUCTION SAFETY ISSUES

- How work permit
- Fire watch
- Electrical safety – lock out tag out
- Indoor air quality
- Confined work space
- Barrier access permits – maintaining fire and smoke compartments

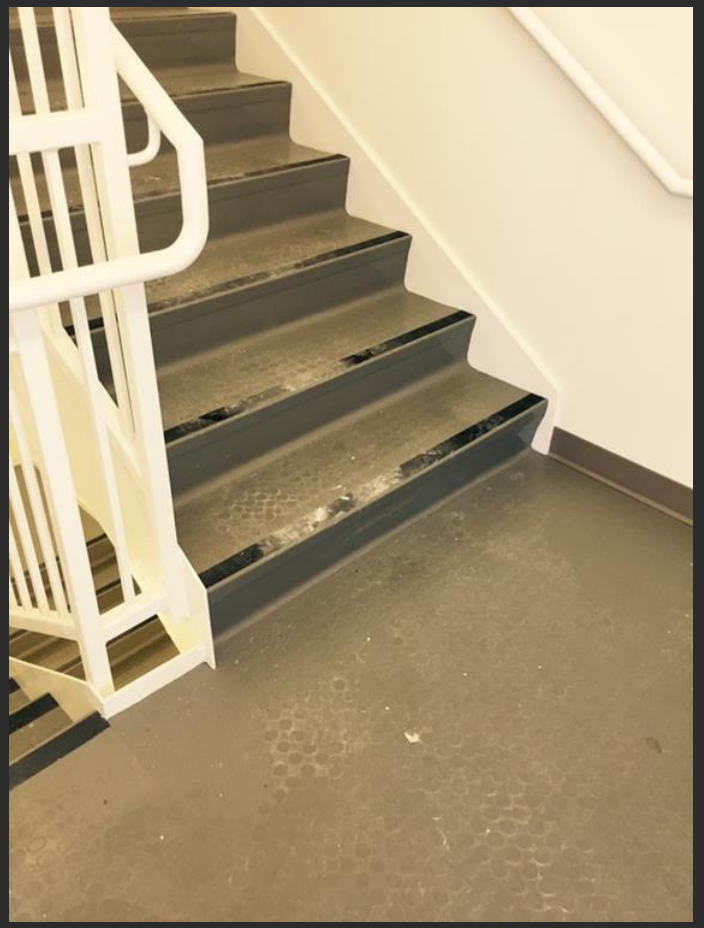
# BARRIER ACCESS PERMITS

- Above ceiling permit
- Required by Joint Commission
- Assures integrity of fire stopping above ceiling is maintained
- Must have gone through IP training to obtain permit
- Will be displayed at jobsite
- Electricians usually display on ladder

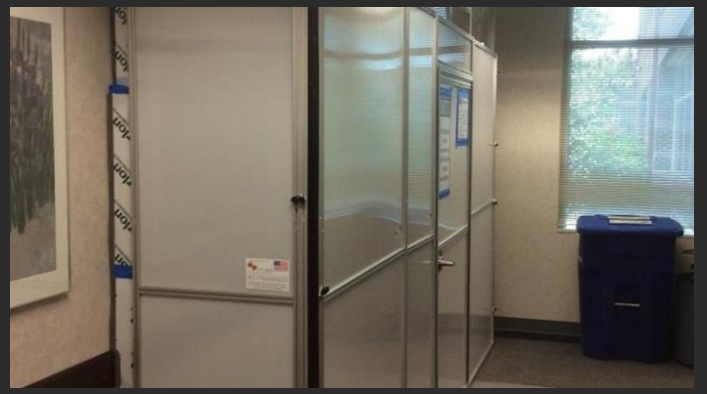
# NOW THE FUN BEGINS

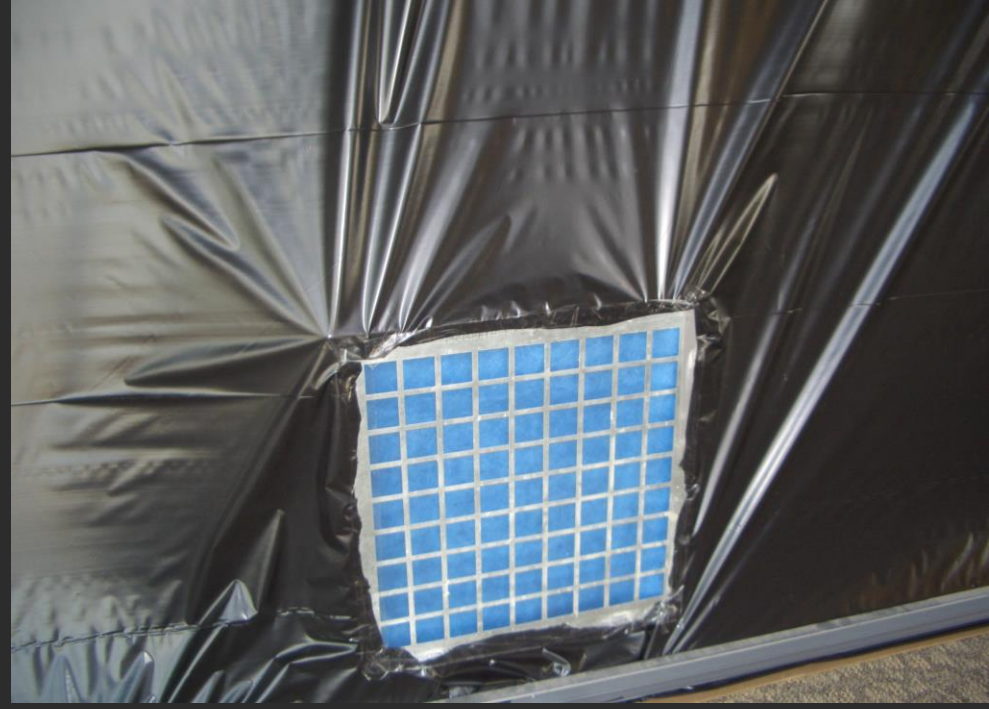
- Make yourself visible and reachable
- Make sure contractors understand your expectations
  - Contractor safety class
- Make time for project walk throughs
- Frequency determined by several factors
  - Contractors time on campus
  - History with contractor previous good and or bad experiences)
  - High risk areas
- Ask questions
- Good communication

# WHAT TO LOOK FOR


BJH South O.R. Project
CAUTION
CONSTRUCTION






WILSON

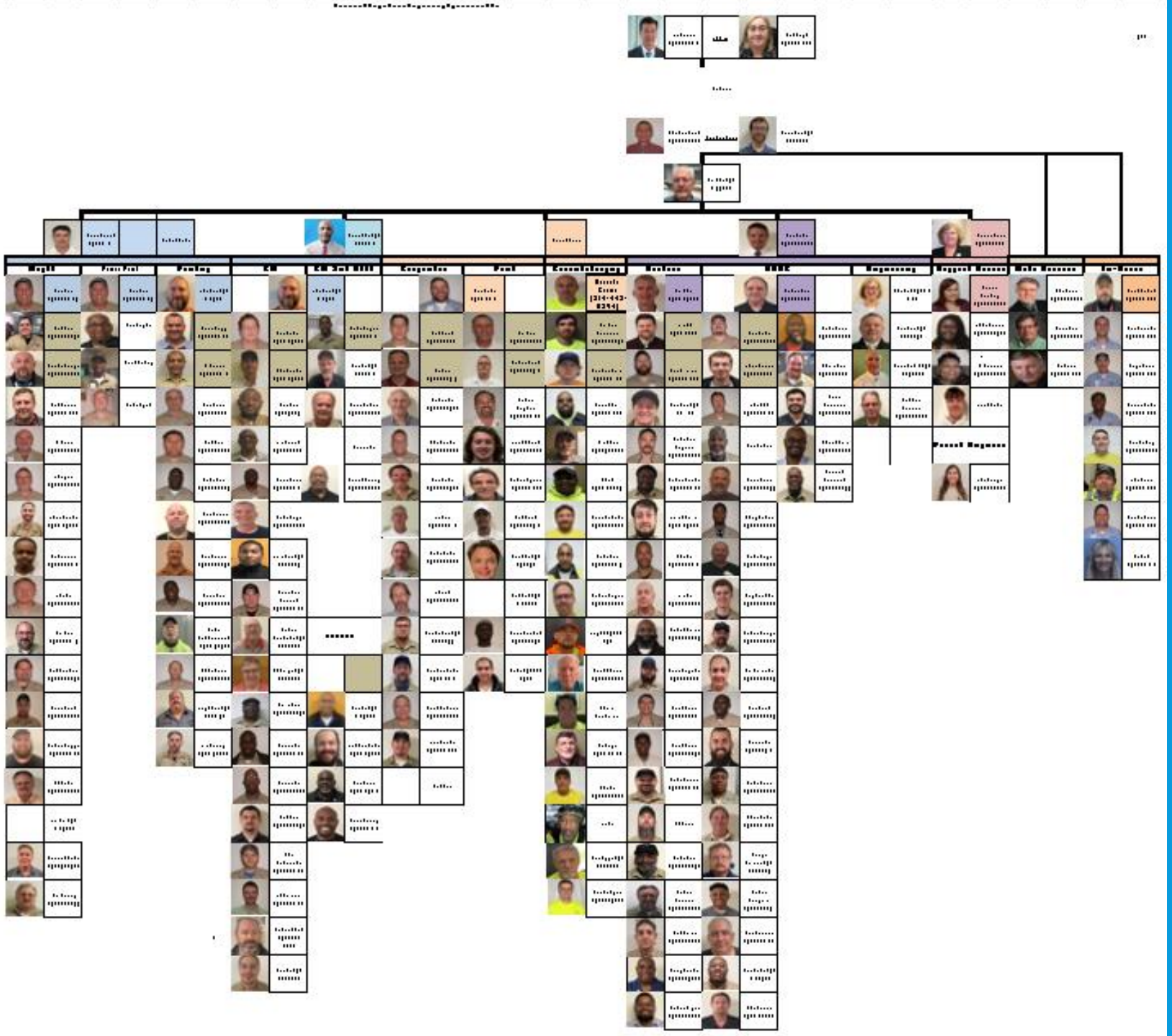

C4P
HEPACART

# CONSTRUCTION IS FINISHED

- Commissioning
- All systems operating as designed
  - Testing done prior to demolition for comparison
- Hand sanitizer and sharps appropriately placed

# CONSTRUCTION IS FINISHED

- Area cleaned by contractor
- Area cleaned by EVS
- All water sources run to make sure no stagnant water
- Work with moving team to get patients back to unit
- Unit opens with patients



# DON'T FORGET

- Your crew of in-house guys
- Planned maintenance
- Every system in the hospital
  - Electrical
  - Plumbing
  - HVAC
  - Fire protection
- Minor emergent issues

# FACILITIES ENGINEERING

- Infrastructure failures
  - Daily issues
  - Urgent – emergent issues
- ICRA for repairs

# QUESTIONS?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